

# **INTEREST, DISCOUNTS, AND SALES**

USING PERCENTAGES

# NOW THAT WE KNOW PERCENTAGES WE CAN WORK BACKWARD FROM WHAT WE DID

What percent of \_\_\_\_\_ is \_\_\_\_\_

What percent of 400 is 40?

To solve we need to put math symbols in place of  
any words that we can.

What percent =  
variable ( $x$ )

Is = Equals (=)

Of = multiply (X)

## LET US TRY THAT AGAIN...

What percentage of 400 is 40?

$$\begin{array}{r} \boxed{x} \quad \boxed{\times} \quad 400 \quad \boxed{=} \quad 40 \\ \hline 400 \qquad \qquad \qquad 400 \end{array}$$

$$\boxed{x} \quad \boxed{=} \quad 0.1 \quad \rightarrow \quad 10\%$$

We must change this to  
a percentage!

# EXAMPLES

What percentage of 70 is 35?

What percentage of 300 is 75?

What percentage of 500 is 5?

# WHERE ELSE DO YOU SEE PERCENTAGES?

## Discounts

- 10% off sale for your next pair of shoes

## Interest rates at the bank

- I put \$1000 in the bank and leave it there for a year, I will still have my \$1000 plus a little bit of interest.

# DISCOUNTS

When an item goes on sale it has a sign that says:

“15% OFF!”

But what does that actually mean?

Well we are going to learn so the next time you buy something on sale you can find out how much it costs before the cashier tells you.

# DISCOUNTS

You are looking at a pair of shoes and they cost \$140 but have a sign that says “take additional 15% off”

First find out how much 15% of 140 is:

$$15\% \times 140 = 21$$

(Remember  $15\% = 0.15$ )

Now subtract this value from the original price or number:

$$140 - 21 = 119$$

# DISCOUNTS

Practice a few:

20% off of 180

35% off of 150

65% off of 80



# INTEREST

To find interest we use the formula:

$$I = Prt$$

We need to know what each of these variables (letters) stand for:

I = Interest

r = rate  
(decimal)

This rate will be  
given as a  
percent

P = principle

t = time

Principle means what  
amount of money you  
start out with

# FINDING INTEREST

Step one: Identify all variables that you have

$I =$   $r =$

$P =$   $t =$

Step two: Plug values into formula

$I = Prt$

$I = ( ) \times ( ) \times ( )$

Step three: Solve (multiply)

## EXAMPLE

Mathew earned \$1200 and put it into the bank, the bank has a rate of 2% and Mathew leaves his money in the bank for 3 years. How much interest does Mathew earn?

$$I = ?$$

$$r = 2\%$$
$$r = 0.02$$

$$P = 1200$$

$$t = 3$$

$$I = Prt$$

$$I = (1200) \times (0.02) \times (3)$$

$$I = 72$$

## EXAMPLE (CONTINUED)

How much money does Mathew have after the three years?

We take the money Mathew put into the bank and add the interest he made.

$$\text{Total \$} = P + I$$

$$\text{Total \$} = 1200 + 72$$

$$\text{Total \$} = 1272$$

## EXAMPLE

Anita has \$2300 and puts it in a bank that has a 3% interest rate for 5 years.  
How much money will she have after the 5 years?

$$I = ?$$

$$r = \quad \%$$
$$r =$$

$$P =$$

$$t =$$

$$I = Prt$$

$$I = ( \quad ) \times ( \quad ) \times ( \quad )$$

$$I =$$

How much money will she have after 5 years?

$$\text{Total \$} = ( \quad ) + ( \quad )$$

$$\text{Total \$} =$$